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LISTING OF CLAIMS

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2 What is claimed is:

3 1. (currently amended) A method comprising:

4 differentiating at least one service class in a kernel to provide different levels of service for  
5 system performance to users to perform service differentiation based on content in at least one  
6 data packet, including the steps of:

7 capturing said at least one data packet until a complete application header is detected;

8 parsing said complete application header to determine at least one application tag;

9 matching said at least one application tag to at least one matching rule;

10 determining a presence of at least one match with said at least one matching rule; and

11 performing service differentiation action based on said at least one matching rule in order to  
12 provide a particular level of service from said different levels of service.

13 2. (original) A method as in claim 1, wherein said at least one application tag includes at least  
14 one tag taken from a group of tags including: URI, cookie, request method, HTTP version, a tag  
15 in an application protocol, and a tag in a communication protocol.

16 3. (currently amended) A method as in claim 1, wherein said at least one application tag is a URI,  
17 and wherein the URI is the second string in a HTTP header as defined in the application  
18 protocol, ~~and the cookie starts with a cookie delimiter as defined in an application protocol~~  
19 ~~wherein the URI is the second string in a HTTP header.~~

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- 1 4. (original) A method as in claim 1, further comprising employing a table having said at least  
2 one matching rule.
- 3 5. (original) A method as in claim 1, wherein the step of determining includes finding a best  
4 match.
- 5 6. (original) A method as in claim 1, wherein said step of performing service differentiation  
6 action includes at least one action taken from a group of actions including: dropping, rate  
7 controlling, scheduling connections, monitoring, request prioritization, and a policing action.
- 8 7. (currently amended) A method as in claim 1, wherein said step of performing service  
9 differentiation action includes an action of dropping, and wherein said action of dropping  
10 includes discarding a connection based on rules that are created to provide better performance to  
11 the connections that are accepted.
- 12 8. (original) A method as in claim 6, wherein said action includes at least one act taken from a  
13 group of acts including: sending a reset message, sending an application return code, determining  
14 compliance with a given rate and/or burst, prioritization, weighted round robin, round robin,  
15 ordering, recording statistics, performing a cleanup, and protocol control.
- 16 9. (currently amended) A method as in claim 1, further comprising installing at least one  
17 matching rule to provide a higher level of system performance for higher classed packets and  
18 connections.
- 19 10. (original) A method as in claim 1, further comprising detecting establishment of a new  
20 connection.
- 21 11. (original) A method as in claim 10, wherein said step of detecting includes establishing of a  
22 new TCP connection.

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- 1 12. (original) A method as in claim 11, wherein said step of establishing of a new TCP  
2 connection includes: receiving SYN packet; sending SYN-ACK packet; deferring accept;  
3 receiving ACK for SYN-ACK packet; and deferring notification of data packet.
- 4 13. (original) A method as in claim 1, wherein said step of capturing includes detecting  
5 application header delimiters for said at least one data packet.
- 6 14. (currently amended) An apparatus comprising a service differentiation module to provide  
7 different levels of service for system performance to users, said module including a tangible  
8 computing medium enabling functions of:
- 9 a parser to parse a client Web request;
- 10 a classifier to classify the request based on application headers and assigning a request class  
11 within a kernel;
- 12 a selector to determine an action rule based on the request class; and
- 13 a performer to apply the action rule based on the request class in order to provide better system  
14 performance for higher classed packets and connections.
- 15 15. (withdrawn) An apparatus comprising a policy agent, said policy agent including:
- 16 a communicator to communicate from a user space to a kernel with an application interface;  
17 an initializer to instantiate service differentiation rules for an application tag within the kernel  
18 which include classification and action rules; and
- 19 a manager to delete and update rules on a user request.
- 20 16. (withdrawn) A method comprising:

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- 1 forming a rule, including the steps of:
- 2 communicating from a user space to a kernel with an application interface;
- 3 instantiating service differentiation rules for an application tag within the kernel which include
- 4 classification and action rules; and
- 5 deleting and adding rules based upon a user request.
- 6 17. (withdrawn) A method as in claim 16, further comprising updating rules based upon a user
- 7 request.
- 8 18. (original) An article of manufacture comprising a computer usable medium having computer
- 9 readable program code means embodied therein for causing service differentiation, the computer
- 10 readable program code means in said article of manufacture comprising computer readable
- 11 program code means for causing a computer to effect the steps of claim 1.
- 12 19. (original) A program storage device readable by machine, tangibly embodying a program of
- 13 instructions executable by the machine to perform method steps for service differentiation, said
- 14 method steps comprising the steps of claim 1.
- 15 20. (currently amended) A computer program product comprising a tangible computer usable
- 16 medium having computer readable program code means embodied therein for causing service
- 17 differentiation, the computer readable program code means in said computer program product
- 18 comprising computer readable program code means for causing a computer to effect the
- 19 functions of claim 14.
- 20 21. (withdrawn) A computer program product comprising a computer usable medium having
- 21 computer readable program code means embodied therein for causing rule installation, the

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1 computer readable program code means in said computer program product comprising computer  
2 readable program code means for causing a computer to effect the functions of claim 15.

3 22. (currently amended) An apparatus comprising a computing medium enabling at least one  
4 function of:

5 means for differentiating at least one service class in a kernel to perform service differentiation  
6 based on content in at least one data packet, comprising:

7 means for capturing said at least one data packet until a complete application header is detected;

8 means for parsing said complete application header to determine at least one application tag;

9 means for matching said at least one application tag to at least one matching rule;

10 means for determining a presence of at least one match with said at least one matching rule; and

11 means for performing service differentiation action based on said at least one matching rule,

12 ~~wherein at least one of said means is a tangible means.~~

13 23. (currently amended) A computer program product comprising a tangible computer usable  
14 medium having computer readable program code means embodied therein for causing  
15 differentiation of at least one service class in a kernel, the computer readable program code  
16 means in said computer program product comprising computer readable program code means for  
17 causing a computer to effect the functions of claim 22.

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